INDEX TO SUBJECTS

ACETYLCHOLINE. *See* Cholinesterase-physostigmine-acetylcholine system.

Acid anion displacement and recovery following exercise, physical theory, 155

—, ascorbic, in simple solution and in mixtures of naturally occurring compounds, quantitative effect of x-rays, 69

—, ascorbic, oxidase, highly purified, preparation and properties, 167

—, ascorbic, oxidase, inactivation, 181

Acid-base equilibrium of blood, homeostatic adjustments after exercise, 143

Acidic properties of collodion, quantitative studies and correlation with membrane structure and activity, 433

Adenosinetriphosphate and muscular contraction, changes in anomalous viscosity and flow-birefringence of myosin solutions in relation to, 355

Albumin, egg, denaturation changes with urea, radiation, and heat, 101

Allantoic and amniotic fluids of chick, surface tension, 29

Ameba in strychnine sulfate solution and conditioned media, relation between attachment to substratum and ingestion by, biological assay of conditioned media, 339

Amniotic and allantoic fluids of chick, surface tension, 29

Anion displacement, acid, and recovery following exercise, physical theory, 155

Arbacia punctulata egg, oxygen consumption and cell division, effects of urethane and chloral hydrate, 469

Ascorbic acid in simple solution and in mixtures of naturally occurring compounds, quantitative effect of x-rays, 69

— acid oxidase, highly purified, preparation and properties, 167

— acid oxidase, inactivation, 181

BASE, acid-, equilibrium, of blood, homeostatic adjustments after exercise, 143

Biological assay of conditioned media, relation between attachment to substratum and ingestion by ameba, 339

Bird pecten, significance, and modifications of flicker response contour, 287

— pecten, theory, and flicker response contours for sparrow, 315

Birefringence, flow-, and anomalous viscosity, of dilute solutions of proteins from embryonic and other tissues, 233

—, flow-, and anomalous viscosity, of protein solutions, changes, in myosin solutions, in relation to adenosinetriphosphate and muscular contraction, 355

—, flow-, and anomalous viscosity, of protein solutions, general behavior of proteins subjected to shear, 201

Blood, acid-base equilibrium, homeostatic adjustments after exercise, 143

— corpuscles, red. *See* Erythrocytes.

CARBON dioxide fixation in photosynthesis by *Chlorella*, separation of oxygen liberation from, 15

— dioxide tension, effect on metabolism of cerebral cortex and medulla oblongata, 325

Cell division and oxygen consumption in *Arbacia punctulata* egg, effects of urethane and chloral hydrate, 469
— division rate and oxygen consumption in *Tetrahymena geleii*, effect of urethane, 461
Cells, blood, red. *See* Erythrocytes.
—, plant, large, inner and outer protoplasmic surfaces, plasmolysis due to salts, 139
Cerebral cortex and medulla oblongata, metabolism, effect of carbon dioxide tension, 325
Chloral hydrate and urethane, effects on oxygen consumption and cell division in *Arbacia punctulata* egg, 469
Chlorella, photosynthesis, separation of oxygen liberation from carbon dioxide fixation, 15
Cholinesterase-physostigmine-acetylcholine system illustrating mechanism of enzyme-inhibitor-substrate reactions, 529
Ciliate, *Tetrahymena geleii*, oxygen consumption and cell division rate, effect of urethane, 461
Collodion membrane, structure and electrical behavior, quantitative studies on acidic properties of collodion and their correlation with membrane structure and activity, 433
— membrane, structure and electrical behavior, water uptake and swelling in aqueous solutions of organic electrolytes and non-electrolytes, 451
— membrane, structure and electrical behavior, water uptake and swelling in water and solutions of strong inorganic electrolytes, 77
Corpuscles, blood, red. *See* Erythrocytes.

DENATURATION changes in egg albumin with urea, radiation, and heat, 101

EGG albumin, denaturation changes with urea, radiation, and heat, 101
—, *Arbacia punctulata*, oxygen consumption and cell division, effects of urethane and chloral hydrate, 469
Electrical behavior and structure of collodion membrane, quantitative studies on acidic properties of collodion and their correlation with membrane structure and activity, 433
— behavior and structure of collodion membrane, water uptake and swelling in aqueous solutions of organic electrolytes and non-electrolytes, 451
— behavior and structure of collodion membrane, water uptake and swelling in water and solutions of strong inorganic electrolytes, 77
Electricity, *Nitella*, nature of action current, partial response and all-or-none law, 61
Electrolytes, inorganic, strong, solutions, water uptake and swelling of collodion membranes in water and, 77
—, organic, and non-electrolytes, aqueous solutions, water uptake and swelling of collodion membranes in, 451
Embryonic and other tissues, proteins from, anomalous viscosity and flow-birefringence of dilute solutions, 233
Enzyme - inhibitor - substrate reactions, cholinesterase - physostigmine-acetylcholine system, 529
Equilibrium of blood, acid-base, homeostatic adjustments after exercise, 143
Erythrocytes, crenated, osmotic behavior, 273
Exercise, homeostatic adjustments after, acid-base equilibrium of blood, 143

Exercise, physical theory of acid anion displacement and recovery following, 155

FLOW-BIREFRINGENCE and anomalous viscosity of dilute solutions of proteins from embryonic and other tissues, 233
— and anomalous viscosity of protein solutions, changes, in myosin solutions, in relation to adenosinetriphosphate and muscular contraction, 355
— and anomalous viscosity of protein solutions, general behavior of proteins subjected to shear, 201
Fluids, allantoic and amniotic, chick, surface tension, 29
Fovea, flicker relations within, 119

GLYCERIDES, rate of hydrolysis by pancreatic lipase, effect of temperature, 113

HEAT, urea, and radiation, denaturation changes in egg albumin with, 101
Hemolysis, inhibition, mechanism, 1
Hemolytic systems *in vivo*, kinetics, 483
Homeostatic adjustments after exercise, acid-base equilibrium of blood, 143
Hydrolysis, triglycerides, by pancreatic lipase, effect of temperature on rate, 113

IMPEDANCE, potential, and rectification in membranes, 37
Ingestion by ameba and attachment to substratum, relation in strychnine sulfate solution and conditioned media, biological assay of conditioned media, 339
Inorganic electrolytes, strong, solutions, water uptake and swelling of collodion membranes in water and, 77

KINETICS of *in vivo* hemolytic systems, 483

LAW, all-or-none, and partial response to action current in *Nitella*, 61
Lipase, pancreatic, effect of temperature on rate of hydrolysis of triglycerides by, 113

MEDIA, conditioned, biological assay, relation between attachment to substratum and ingestion by ameba in strychnine sulfate solution and, 339
Medulla oblongata and cerebral cortex, metabolism, effect of carbon dioxide tension, 325
Membrane, collodion, structure and electrical behavior, quantitative studies on acidic properties of collodion and their correlation with membrane structure and activity, 433
—, collodion, structure and electrical behavior, water uptake and swelling in aqueous solutions of organic electrolytes and non-electrolytes, 451
—, collodion, structure and electrical behavior, water uptake and swelling in water and solutions of strong inorganic electrolytes, 77
Membranes, potential, impedance, and rectification, 37
Metabolism of cerebral cortex and medulla oblongata, effect of carbon dioxide tension, 325
Muscular contraction and adenosinetriphosphate, changes in anomalous viscosity and flow-birefringence of myosin solutions in relation to, 355
Myosin solutions, changes in anomalous viscosity and flow-birefringence in relation to adenosinetriphosphate and muscular contraction, 355

NITELLA, action current, partial response and all-or-none law, 61

ORGANIC electrolytes and non-electrolytes, aqueous solutions, water uptake and swelling of collodion membranes in, 451
Osmotic behavior of crenated red cells, 273
Oxidase, ascorbic acid, highly purified, preparation and properties, 167
—, ascorbic acid, inactivation, 181
Oxygen consumption and cell division in *Arbacia punctulata* egg, effects of urethane and chloral hydrate, 469
— consumption and cell division rate in *Tetrahymena geleii*, effect of urethane, 461
— liberation, separation from carbon dioxide fixation in photosynthesis by *Chlorella*, 15

PANCREATIC lipase, effect of temperature on rate of hydrolysis of triglycerides by, 113
Pecten, avian, significance, and modifications of flicker response contour, 287
—, avian, theory, and flicker response contours for sparrow, 315
Photosynthesis by *Chlorella*, separation of oxygen liberation from carbon dioxide fixation, 15
Physical properties of allantoic and amniotic fluids of chick, surface tension, 29
Physostigmine. *See* Cholinesterase-physostigmine-acetylcholine system.
Plant cells, large, inner and outer protoplasmic surfaces, plasmolysis due to salts, 139
Plasmolysis due to salts, 139
Potassium effect, model, 91
Potential, impedance, and rectification in membranes, 37
Protein from embryonic and other tissues, anomalous viscosity and flow-birefringence of dilute solutions, 233
— solutions, anomalous viscosity and flow-birefringence, changes, in myosin solutions, in relation to adenosinetriphosphate and muscular contraction, 355
— solutions, anomalous viscosity and flow-birefringence, general behavior of proteins subjected to shear, 201
Protoplasm, inner and outer surfaces, of large plant cells, plasmolysis due to salts, 139

RADIATION, urea, and heat, denaturation changes in egg albumin with, 101
Rectification, potential, and impedance in membranes, 37
Roentgen rays, quantitative effect on ascorbic acid in simple solution and in mixtures of naturally occurring compounds, 69

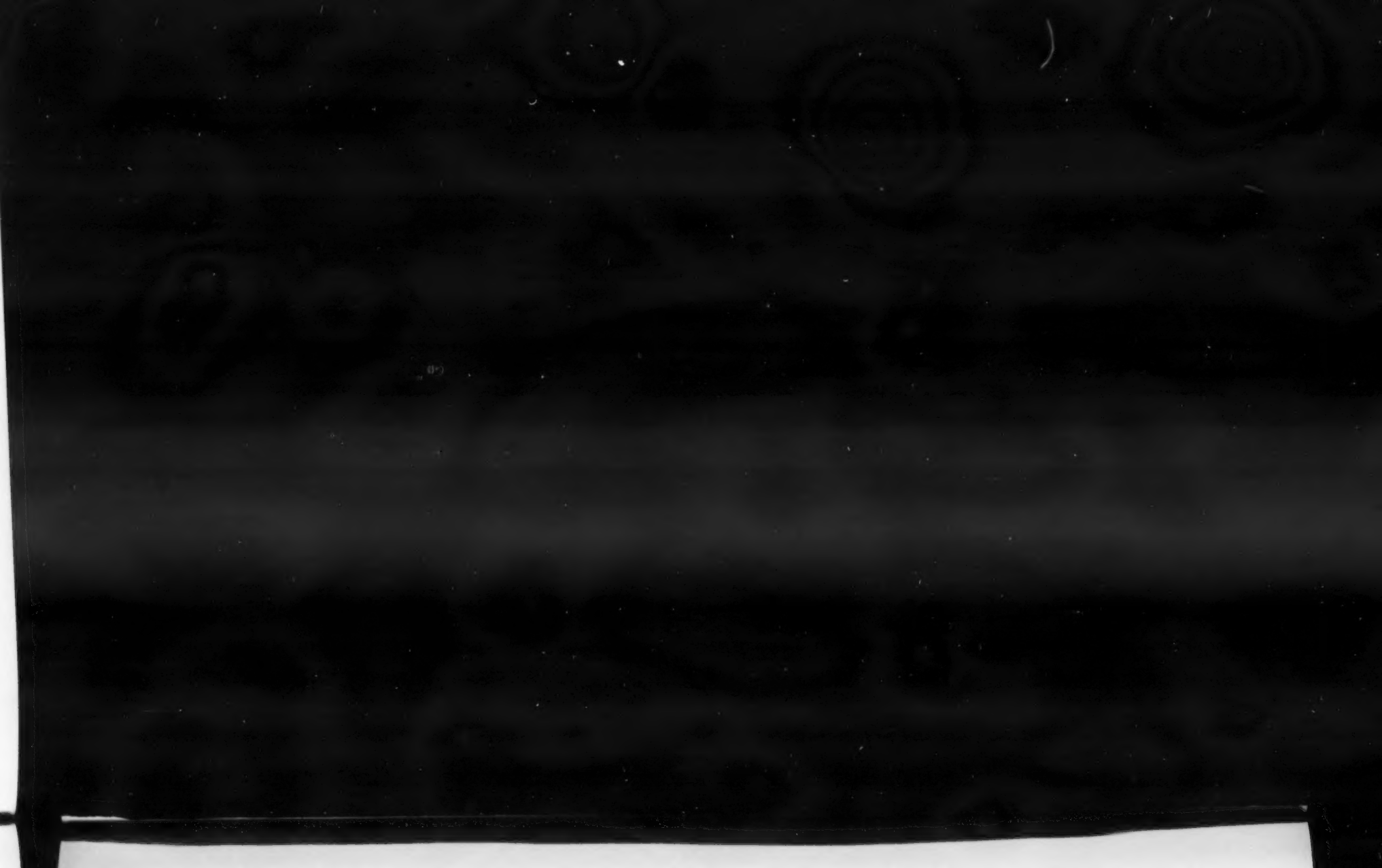
SALTS, plasmolysis due to, 139
Sea urchin egg, oxygen consumption and cell division, effects of urethane and chloral hydrate, 469
Sparrow, flicker response contours, and theory of avian pecten, 315
Strychnine sulfate solution and conditioned media, relation between attachment to substratum and ingestion by ameba in, biological assay of conditioned media, 339
Substrate, attachment to and ingestion by ameba, relation in strychnine sulfate solution and conditioned media, biological assay of conditioned media, 339
Surface tension of allantoic and amniotic fluids of chicks, 29
Swelling and water uptake of collodion membranes in aqueous solutions of organic electrolytes and non-electrolytes, 451

Swelling and water uptake of collodion membranes in water and solutions of strong inorganic electrolytes, 77

TEMPERATURE, effect on hydrolysis rate of triglycerides by pancreatic lipase, 113
Tension, carbon dioxide, effect on metabolism of cerebral cortex and medulla oblongata, 325
—, surface, of allantoic and amniotic fluids of chick, 29
Tetrahymena geleii, oxygen consumption and cell division rate, effect of urethane, 461
Tissues, embryonic, proteins from, anomalous viscosity and flow-birefringence of dilute solutions, 233
Triglycerides, rate of hydrolysis by pancreatic lipase, effect of temperature, 113
Triphosphate, adenosine-, and muscular contraction, changes in anomalous viscosity and flow-birefringence of myosin solutions in relation to, 355

UREA, radiation, and heat, denaturation changes in egg albumin with, 101
Urethane and chloral hydrate, effects on oxygen consumption and cell division in *Arbacia punctulata* egg, 469
—, effect on oxygen consumption and cell division rate in *Tetrahymena geleii*, 461

VISCOSITY, anomalous, and flow-birefringence of dilute solutions of proteins from embryonic and other tissues, 233
—, anomalous, and flow-birefringence, of protein solutions, changes, in myosin solutions, in relation to adenosinetriphosphate and muscular contraction, 355
—, anomalous, and flow-birefringence, of protein solutions, general behavior of proteins subjected to shear, 201
Vision, mechanisms, theory and measurement, flicker relations within fovea, 119
—, mechanisms, theory and measurement, flicker with subdivided fields, 401
—, mechanisms, theory and measurement, modifications of flicker response contour, and significance of avian pecten, 287
—, mechanisms, theory and measurement, visual duplexity, 513

WATER uptake and swelling of collodion membranes in aqueous solutions of organic electrolytes and non-electrolytes, 451
— uptake and swelling of collodion membranes in water and solutions of strong inorganic electrolytes, 77

X-RAYS. *See* Roentgen rays.